

WEATHER OF THE MONTH.

WEATHER OF NORTH AMERICA AND ADJACENT OCEANS.

NORTH ATLANTIC OCEAN.

By F. A. YOUNG.

The average pressure for the month was slightly below the normal at land stations on the American coast north of Florida, and somewhat higher than usual in the British Isles, as well as the Azores and Bermudas, while it was practically normal in the Gulf of Mexico.

The number of days with gales was apparently not far from the normal over the steamer lanes, while they were reported more frequently than usual off the American coast. Most of them occurred in the last decade of the month, including two tropical storms, which will be referred to later.

Fog was unusually prevalent in the vicinity of the British Isles, while the number of days on which it was reported off the American coast and over the Grand Banks was not far from normal, and the middle section of the steamer lanes was comparatively free.

From Greenwich mean noon of the 1st to the 7th light to moderate winds were the rule over the entire ocean, with the Azores HIGH well developed. From the 1st to the 3rd fog was reported over the Grand Banks and off the European coast, while on the 4th and 5th it was confined to the latter region, and on the 6th and 7th the ocean was comparatively free.

Shortly after Greenwich mean noon of the 7th, a disturbance began to develop in the vicinity of Sable Island, Nova Scotia. Extracts from the log book of the American S. S. *Sahale* show that from 9 a. m. until noon (local time) easterly to northeasterly winds of force from 7 to 11 prevailed, the maximum velocity occurring between 11 a. m. and noon, and the minimum barometer reading of 29.34 inches at 11:15 a. m. The noon position on September 7 was given as latitude 42° 40' N., longitude 62° 42' W.

The British S. S. *Kaiserin Auguste Victoria* experienced the same storm while not far from the *Sahale*, her noon position, 75th meridian time, being latitude 42° 00' N., longitude 61° 29' W. This vessel encountered a southeasterly wind, force 7, at 11 a. m. The wind backed gradually, and at 3:30 p. m. the direction was NW. by N., force 7 to 8. The highest force recorded was 9, and the lowest barometer reading 29.23 inches at 1 p. m.

By Greenwich mean noon on the 9th, as shown on Chart IX, the center of this disturbance was about 250 miles east of St. John's, N. F., and a number of vessels in the southerly quadrants reported westerly and southwesterly gales. The observer on the Dutch S. S. *Rijn* states in the storm log:

Gale began on the 8th. Lowest barometer reading 29.56 inches at 6 a. m. on the 9th; position, latitude 48° 05' N., longitude 38° 03' W. End of gale on the 11th. Highest force of wind 10; shifts of wind SSW. to NNW.

This LOW drifted eastward, and on the 11th the center was near latitude 50°, longitude 30°. At the same time Halifax, N. S., was near the center of a second disturbance of limited extent; the observer on the British S. S. *Lancastrian* states in regard to this storm:

September 11, 10 a. m. Latitude 42° 33' N., longitude 58° 51' W. Wind SSE. Barometer 29.60 inches. Suddenly hauled SSW., force 8. Barometer falling rapidly. 10:30, hauled SW.-WSW., force 10. Barometer 29.20 inches. 11:30, hauled W. and NW., force 10, squalls of hurricane force, sea increasing rapidly. Barometer 29.18 inches.

Noon, hauled N., force 10, high, dangerous sea. Barometer 29.26 inches. 2 p. m., whole gale from NNE. Barometer 29.30 inches, rising slowly. 4 p. m., wind and sea decreasing. Barometer 29.60 inches. 6 p. m., moderate north wind, high NE. swell, barometer 29.75 inches. 10 p. m., light north wind, moderate NE. swell, barometer 29.86 inches. Ends latitude 42° 12' N., longitude 61° 26' W. Highest sea in NW. quadrant, short and very precipitous.

The storm log from the British S. S. *Strathfillian* is as follows:

Gale began on the 10th. Lowest barometer reading 29.54 inches at 9:30 p. m. on the 10th; position, latitude 48° 20' N., longitude 55° 40' W. End of gale on the 11th. Highest force of wind, 10; shifts of wind, four points.

The observer on the British S. S. *Baltic* states:

Squall began between 8 p. m. and 11 p. m., September 11. Lowest barometer 29.84 inches; position, latitude 51° 10' N., longitude 14° 40' W. Highest force of wind 8; shifts of wind SSE. to S.

On the 12th the center of the western LOW was about 250 miles SSE. from St. John's, N. F., and westerly gales prevailed over the southerly quadrants. On the same day the center of the eastern disturbance was near latitude 51°, longitude 21°; no heavy winds were reported, and the depression was evidently fast filling in. On the 13th and 14th a few reports were received denoting westerly gales over the eastern part of the steamer lanes, and on the latter date heavy weather was also encountered in southern waters, as shown by the storm log of the Belgian S. S. *Olympier*:

Gale began on the 13th. Lowest barometer 29.50 inches, 4 a. m., on the 14th; position, latitude 36° 18' N., longitude 45° 06' W. End of gale at noon on the 14th. Highest force of wind 12; shifts of wind, SSE. to NNW.

From the 15th to the 17th, moderate weather prevailed over the entire ocean, with fog over the Grand Banks, and also off the English coast. On the 18th there was a disturbance limited in extent, central in the Irish Channel, accompanied by moderate northwesterly gales off the SW. coast of Ireland, and a southwest wind, force 8, was also reported at the land station at Falmouth, England.

A few vessels that on the 19th were between the 42d parallel and St. John's, N. F., reported moderate southerly gales, while light to moderate winds prevailed over the rest of the ocean.

Chart X shows the tropical storm that was central in the Gulf of Mexico in Greenwich mean noon of the 21st. A description of this storm at different Weather Bureau stations in Louisiana and Texas appears elsewhere,¹ and this article will therefore deal only with reports received from vessels.

According to the daily weather map the center of this disturbance first appeared on the evening of the 19th, near latitude 19°, longitude 86°. It moved in a northwesterly direction, the track of the storm being shown on Chart III.

A letter to the Philadelphia Office, from Captain J. S. Christensen of the American S. S. *Lake Forsby* states:

On September 18, about 10 p. m., while the ship was in the straits of Florida, bound from Philadelphia to Houston, Tex., a radio was received that a tropical disturbance had formed in the Caribbean Sea and was moving across the Gulf of Mexico in a NW. direction.

According to extracts from the log, from 8 a. m., September 19, near Sambero Shoal to noon on the 21st,

¹ Cf. this REVIEW, pp. 520-524.

at latitude 26° 40' N., longitude 87° 38' W., the vessel experienced light to moderate winds, varying from ENE to SE with falling barometer and partly cloudy to overcast weather during the first part of the period, and heavy rain squalls during the latter. At 1 p. m. the SE. wind had increased to a force of 8, with heavy rain squalls and high sea.

From 2 to 6 p. m. the wind held from the SE., force from 10-11, with the lowest barometer reading of 29.80 inches, occurring near 4:30 p. m., position, latitude 26° 43' N., longitude 87° 48' W., regarding this period the log states:

Two p. m., whole gale, heavy rain squalls. Heavy sea. Slow speed ahead. 4:30 p. m., ship laboring heavily. Using oil to keep sea from breaking on board. Hove ship to on ESE. course. Heavy sea from SE with swell from west. Heavy sea and rain squalls, barometer rising. Six p. m., hove to on ESE. course, heavy sea and rain squalls, barometer rising. 8 p. m., heavy sea and rain squalls, storm subsiding. Hove to on ESE. course. 10 p. m., heavy sea, clear atmosphere, barometer rising. Midnight, 22d, beginning to clear, heavy sea, hove to on ESE. course. 4 a. m. weather clearing, rough sea, full speed ahead, course N. by W. $\frac{1}{4}$ N. Position latitude 26° 40' N., longitude 87° 16' W., barometer 29.95 inches.

The observer on the American S. S. *Standard*, states:

At 6 p. m. on the 20th, wind ENE. force 7, barometer 30.01 inches; position, latitude 31.22' N., longitude 79° 20' W. 6 p. m. on the 21st, wind NE., force 8; barometer 30 inches; position, latitude 33° 16' N., longitude 76° 40' W. Between a. m. and p. m. observations of the 21st, the wind was NE., force 9; between 8 and 12 p. m., NE., force 9-10.

American S. S. *Radiant*:

Gale began on the 20th. Lowest barometer 29.28 inches at 9 a. m. on the 21st, position, latitude 25° 48' N., longitude 88° 50' W. End of gale on the 21st. Highest force of wind 12, shifts of wind E. to SSW.

American S. S. *El Rio*:

On the 20th fresh east breeze, sky overcast. 21st a. m. fresh gale. Noon, strong gale, continuous rain, heavy sea. 3 p. m. clearing, and shifting from ESE. to S. 8 p. m. light passing showers, moon showing at intervals, sea decreasing, barometer steady. Midnight, barometer rising, clear sky, fresh southerly wind; 22nd partly overcast, light SW. wind. Position, 8 a. m. 21st, latitude 26° 20' N., longitude 87° 35' W. 8 p. m., 21st, latitude 27° 18' N., longitude 89° 50' W.

Hondurian S. S. *Yoro*:

Gale began on the 21st. Lowest barometer 29.70 inches at 11 a. m. 21st, position, latitude 26° 02' N., longitude 86° 06' W. Highest force of wind, 10; shifts of wind SSE. to S.

On the morning of the 22d as shown on Chart XI, vessels in the vicinity of Hatteras, experienced north-easterly gales, while moderate weather prevailed over the rest of the ocean.

On the 23d there was a disturbance central near latitude 50°, longitude 40°; the observer on the British S. S. *Galtymore*, states in the storm log: "Gale began on the 22d, lowest barometer 29.84 inches at 8 a. m. on the 23d position, latitude 49° 51' N., longitude 40° 40' W. End of gale on the 23d. Highest force of wind, 10; shifts of wind SW-W-N." From the 24th to the 27th no heavy weather was reported, and fog prevailed in the vicinity of the British Isles during this period, and off the American coast on the 25th and 26th.

Charts XII, XIII and XIV show the conditions on the 28th, 29th and 30th, respectively, when a disturbance of marked intensity covered an extensive area over the eastern part of the steamer lanes. Storm reports are as follows:

Belgian S. S. *Remier*:

Storm began on the 28th. Lowest barometer 29.12 inches at 7 a. m. on the 28th; position, latitude 39° 40' N., longitude 23° 39' W. End of gale October 5. Highest force of wind, 11. Shifts of wind N-S.

British S. S. *Manchester Merchant*:

Gale began on the 27th. Lowest barometer 29.02 inches, at 8 a. m. on the 28th. Position, latitude 51° 50' N., longitude 24° 58' W. End of gale on the 30th. Highest force of wind 10; shifts of wind NNW-NW. by N.

Dutch S. S. *Mijdrecht*:

Gale began on the 27th. Lowest barometer 29.69 inches on the 28th; position latitude 38° 14' N., longitude 35° 00' W. End of gale on the 28th. Highest force of wind, 10; shifts of wind SW-W-NW-N.

The second Gulf storm of the month was first indicated by a slight depression in the Gulf of Mexico on the evening of the 26th. The track of this storm is shown on Chart III and it did not reach hurricane force until the morning of the 29th. This disturbance was very violent, and among the vessels lost were the American S. S. *Speedwell* and the American schooner *Three Mary's*, while a large number of casualties were also reported.

Mr. Geo. Y. Nicholson, second officer of the British S. S. *Anglo Saxon* reports:

September 29, noon, latitude 25° 23' N., longitude 83° 14' W., moderate breeze and sea, partly cloudy, barometer falling steadily. From 4 to 12 p. m. barometer falling and wind holding from SSW., and increasing in force with heavy rain squalls. At midnight barometer 29.61 inches. Wind shifting to SW., latitude 27° 20' N., longitude 84° 50' W., September 30, 1 a. m., barometer 29.60 inches, wind veering to NNE. Fresh gale, heavy sea, and continuous rain. Three a. m. barometer 29.55 inches (lowest reading), wind steady NNE., whole gale very heavy; 4 a. m. barometer 29.58 inches. Rain ceased, sky clearing, wind backing to north; 5 a. m. barometer 29.61 inches. Moderate gale, high sea, cloudy and clear; 8 a. m. barometer 29.77 inches, wind increasing slightly; 9 a. m. barometer 29.81 inches. Fresh gale, high sea, fine and clear. Same weather continued until 1 p. m. when barometer read 29.87 inches. Noon position, latitude 28° 03' N., longitude 85° 35' W.; 2 p. m. barometer 29.80 inches. Wind lulling at intervals; 4 p. m. barometer 29.89 inches, wind and sea moderate.

At noon on the 29th the position of the American S. S. *West Ashawa* was given as latitude 26° 42' N., longitude 88° 39' W., with overcast weather, moderate SE. breeze and barometer reading of 29.57 inches. The barometer continued to fall and the wind to increase steadily. At 4 p. m. the wind shifted to NNE. and reached its maximum force of 12, which held until 5 p. m. when the lowest barometer reading of 29.36 inches occurred. The force of the wind decreased very gradually with the slowly rising barometer, and it was still blowing a moderate gale at midnight on the 30th although it moderated immediately after that hour. The position of the vessel at noon on the 30th was, latitude 25° 55' N., longitude 89° 58' W.

The storm logs from a number of different vessels are as follows:

Dutch S. S. *Soesdijk*:

Gale began on the 29th, lowest barometer, 29.41 inches, at 2:30 a. m. on the 30th, position latitude 28° 01' N., longitude 83° 58' W. End of gale on the 30th. Highest force of wind, 10; shifts of wind, SSE. to SW.

American S. S. *Westmoreland*:

Gale began on the 29th. Lowest barometer reading 29.40 inches at 8 p. m. on the 29th; position, latitude 32° 01' N., longitude 80° 50' W. End of gale on the 30th. Highest force of wind, 9; shifts SE. to NW., through NE.

A late report from the Danish S. S. *Hammershus* shows that on September 10, from 4 a. m. to 2 p. m., while near latitude 20° 07' N., longitude 50° 36' W., the ship encountered a severe hurricane, with a maximum force of 12 at 8 a. m. and a minimum barometer reading of

29.08 inches at 8:30 a. m. The direction and force of wind at different hours were as follows:

2 a. m., ENE. 7; 6 a. m., NE. 9; 7 a. m., NE. 11; 8 a. m., NNE. 12; 8:30 a. m., shifting; 9 a. m., NW. 8; 10 a. m., WNW. 10; 11 a. m., W. 11; noon, SW. 10; 2 p. m., SSW. 7.

No other reports were received denoting unusual weather in that vicinity on the 10th, but on the 14th the Belgian S. S. *Olympier* encountered winds of a maximum force of 12 when near latitude 36° N., longitude 46° W., as shown by the storm log of that vessel given above. It is not improbable that this was the same storm in which the *Hammershus* was involved.

This storm must have been of very limited extent, as vessels within a comparatively short distance of the *Hammershus* and the *Olympier* reported only light to moderate winds.

NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

Atmospheric conditions over the North Pacific Ocean in September presented somewhat different characteristics from those of August. There was about an equal number of storms of tropical origin in each month but those of September maintained their organization into higher latitudes and more gales were reported from the northern part of the ocean. On the other hand the anticyclonic areas of September did not attain either the magnitude or intensity of those of August, although approximating the normal for the month.

As noted in the review of the weather for August a typhoon prevailed in the Philippines at the close of that month. An account of this storm, as well as of subsequent typhoon developments during September, will be found in a note by Rev. José Coronas, S. J., chief of the meteorological division of the Philippine Weather Bureau, on the weather of the Far East, appearing on page — of the REVIEW.

From this report it will be noted that the close of September found another typhoon prevailing in Asiatic waters, as was the case at the end of August. Only a few reports regarding this storm have been received at the present writing and reference to it is therefore reserved for the review of weather for October.

On September 5 there were indications of a depression in the region of latitude 25° N., longitude 170° E. During the 5th and 6th this disturbance moved in a NNW direction, causing moderate gales in the region traversed. On the 7th it recurved near latitude 40° N., longitude 163° E., and moved rapidly eastward over the Aleutian Islands, at the same time apparently merging with a larger extratropical depression. On the 10th the combined disturbance covered the Gulf of Alaska and was causing moderate to fresh gales over the eastern part of the northern steamer route. This depression reached the British Columbia coast on the 12th.

On the 12th and 13th the American S. S. *Colusa*, Capt. H. L. Jones, Calcutta for San Francisco, was involved in a tropical storm in latitude 24°–24° 30' N., longitude

149°–152° E. Mr. G. W. Stevens, second officer and observer, in reporting on the weather experienced, states that as early as the 10th there was a small head sea, although the sky was cloudless and there was only a gentle breeze from the ENE. On the 11th rain squalls were experienced and the wind increased somewhat; there was a moderate to rough sea. On the 12th the weather was overcast, with the wind continuing to increase to a whole gale from the SE., accompanied by a large confused sea, generally from the SE., and a large SSE. swell. The ship's course was changed during the height of the storm to bring the wind on the starboard bow. The effect of this was shown, after a time, by a rise in the barometer. The lowest barometer was 29.48 inches, at 10 p. m. of the 12th. Shifts of wind, E. to S. by E.; highest force, 10.

Thus the *Colusa*, which had experienced the typhoon of August 30 when in the harbor of Manila, was within the space of two weeks involved in a second tropical storm, evidently crossing its course just ahead of the center.

The subsequent movement of this storm can not be determined with certainty as yet; but it is probable that it moved on a northwesterly course, recurved near Nippon, and was identical with the storm of marked intensity which appeared to the eastward thereof on the 15th–16th.

This storm, which appears to have been the most important of the month, continued on a course about ENE., toward the Aleutians. Its path can be traced fairly well to the coast of southeastern Alaska, which it reached on the 22d.

The American S. S. *Imlay*, Capt. H. Warrer, Shanghai for San Francisco, was involved in this storm on the 17th and 18th in latitude 43° 46' N., longitude 159° 165' E. The lowest barometer was 28.91 inches, which occurred at 11 p. m. of the 17th; highest wind force 11, W.; shifts of wind, SE., S., SW., WNW.

What is considered as an important feature of the weather of September was the gale off the Mexican coast on the 10th. Several ships experienced this disturbance. A typical case is that of the American S. S. *Eastern Glade*, Capt. John N. Ansell, San Pedro for Balboa. Running down the west coast of Mexico, this ship, according to Mr. F. Devine, second officer and observer, had a strong NW. to NNW. wind from the 6th through the 9th. On the 10th, without any great change in the barometer, the wind went to ESE. and increased to a strong gale. During the gale no marked change in the direction of the wind was noted. The lowest barometer was 29.74 inches, at 2 a. m. of the 11th, when in latitude 20° 30' N., longitude 107° 40' W.

Mr. A. H. Morris, observer on the American S. S. *West Coyote*, Capt. Chas. Erickson, also from San Pedro toward Panama, reports that the gale was preceded by a moderate SE. swell and very sultry air, but that the barometer gave no indication of a storm. The lowest barometer recorded was 29.78 inches at 12 p. m. of the 9th in latitude 18° N., longitude 104° W. Shifts of wind E. to S., highest force 7.